

**WE CLAIM:**

1. A computer-based method for displaying storage network monitoring information, comprising:

identifying a topology map for a storage network;

receiving operating information for the storage network;

5 processing the operating information to determine a performance parameter;  
and

for a user interface, generating a performance monitoring display including at least a portion of the topology map and a graphical representation of the performance parameter.

2. The method of claim 1, wherein the performance parameter representation is positioned in the display relative to corresponding portions of the topology map.

3. The method of claim 1, wherein the performance parameter is based on data traffic in a data connection of the storage network and wherein the performance parameter representation is displayed to indicate motion, the motion having a direction corresponding to the data traffic in the data connection.

4. The method of claim 3, wherein the performance parameter representation is displayed to move at a speed that is selected to indicate ranges of values for the performance parameter.

5. The method of claim 4, wherein the performance parameter representation includes two parallel lines comprising dashes separated by a distance and wherein the dashes in one of the lines move in a first direction and the other the dashes in one of the lines moves in a second direction opposite of the first direction to  
5 represent two channel data flow, the performance parameter representation being positioned in the display so as to replace the data connection in the topology map.

6. The method of claim 5, wherein each of the dashed lines is shown to be moving by displaying a dashed line with a first position at a first time and then displaying the dashed line with a second position offset a distance from the first position at a second time.

7. The method of claim 5, wherein the dashes in each of the lines have a size selected based on the value of the performance parameter corresponding to each of the lines, wherein the size is selected to be inversely proportionate to the performance parameter corresponding to each of the lines.

8. The method of claim 1, wherein the graphical representation includes coloring indicative of the value of the performance parameter.

9. The method of claim 8, wherein the performance parameter is utilization of a data throughput capacity of a data connection and wherein the graphical representation includes a double line with each of the lines being solid when there is no utilization and includes line segments when there is a level of utilization,  
5 the length of the line segments decreasing with increasing utilization and the coloring indicating the level of utilization based on a color coding scheme.

10. A method of generating a network monitoring display, comprising:  
discovering a topology of a data storage network including data connections between components of the network;  
collecting a set of data flow information for the data connections; and  
5 generating a performance monitoring display including a graphical representation of the topology with the data connections being represented with a pair of lines comprising line segments with the lines representing active transmit and receive channels of the data connections based on the data flow information, wherein the generating includes displaying the line segments with motion to cause the line  
10 segments to appear to move in directions of data flow in the channels represented by each of the lines.

11. The method of claim 10, wherein the motion is provided at speeds selected for each of the lines based on a performance parameter determined based on the corresponding portion of the data flow information.

12. The method of claim 11, wherein the performance parameter is utilization determined by comparing a measured data throughput channels of a data connection with a data rate capacity of the channels of the data connection and wherein the speed selected for each of the lines represents the determined utilization  
5 of the corresponding channel.

13. The method of claim 10, wherein the generating includes displaying the lines in a color selected from a set of colors, the colors in the set each corresponding to a different range of values of a performance parameter for the data connections determinable from the collected data flow information.

14. The method of claim 13, wherein the colors in the lines of at least some of the pairs of lines differ indicating varying performance parameter values in the transmit and receive channels of the data connections.

15. The method of claim 13, further including receiving a user selection of one of the range of values and wherein the generated performance monitoring display includes only the lines having values for the performance parameter in the selected range of values.

16. The method of claim 10, wherein the generating includes creating a legend defining the graphical representation relative to parameters calculated based on the collected data flow information, the legend including lines with segments having lengths equal to the line segments in the lines in the display and wherein the legend  
5 lines are displayed to have motion corresponding to the motion of the line segments in the display lines.

17. The method of claim 10, further including receiving a traffic contribution display request and wherein the generating includes determining from the

data flow information ones of the data connections contributing data traffic to a component specified in the request, wherein the generated performance monitoring display indicates graphically the contributing ones of the data connections.

18. A user interface for a computer monitor, comprising:  
a map of a data storage network with icons representing physical components of the network;  
pairs of lines between the components representing transmit and receive channels used by connected ones of the components for transferring digital data, wherein at least some of the lines comprise line segments separated by gaps with the line segments displayed moving; and  
a legend including legend lines displayed similarly to the pairs of lines and line definitions proximal to the legend lines indicating a range of performance values corresponding to the legend lines and matching lines.

19. The user interface of claim 18, wherein the line segments in the pairs of lines have a length inversely proportional to a magnitude of the performance value represented by the lines.

20. The user interface of claim 18, wherein the lines and legend lines are colored one of a set of colors arbitrarily associated to a magnitude of the performance value represented by the line.

21. The user interface of claim 18, wherein the line segments are moved at a speed selected from a group of speeds corresponding to a magnitude of the performance value represented by the line.

22. The user interface of claim 18, wherein the legend includes buttons corresponding to the legend lines, the buttons being selectable to cause a subset of the plurality of lines to be displayed comprising the matching lines.